

**Amendment to the Claims**

**Listing of Claims:**

1. (Currently amended) An information handling system, comprising:  
an indirection table comprising a plurality of entries for encoding register access patterns, each register access pattern identifying a register tuple;  
instructions for loading and storing entries in the indirection table;  
a mechanism for identifying instructions that use the indirection table; and  
a mechanism for identifying a set of bits in instructions that are used to index into the indirection table;  
a plurality of registers identified by a register pattern; and  
a compatibility mode and an extended mode, wherein in the compatibility mode for each instruction the system interprets its register access fields directly and in the extended mode the system interprets the register access fields via the indirection table.
2. (canceled)
3. (canceled)
4. (original) The system of claim 1, comprising  
a process for merging a number of registers into an expanded instruction that is used for remaining stages of instruction processing.

5. (Currently amended) A method for processing an instruction, the method comprising[.]:
  - reading an index field in the instruction, wherein the index field comprises an index to an entry in an indirection table;
  - identifying ~~an~~ the entry in the indirection table corresponding to the index, wherein the entry comprises a plurality of register specifiers; and
  - creating an extended instruction comprising the plurality of register specifiers for processing of the instruction.
6. (original) The method of claim 5 further comprising the steps of:
  - determining whether to process the instruction is to be processed in an extended mode;
  - extracting the index field of the instruction when the instruction is to be processed in extended mode; and
  - merging an appropriate number of extended register specifiers with remaining components of the fetched instruction.
7. (original) A method of encoding registers in a computer instruction, said method comprising:
  - constructing a table, the table having a plurality of entries and each entry specifying a combination of a plurality of registers;
  - generating an instruction referencing one of the entries in the table; and
  - managing the table by generating instructions to load table entries from memory and to store table entries to memory.
8. (original) The method of claim 7 wherein the step of constructing a table comprises constructing a table comprising a plurality of register specifiers and  $2^B$  entries where B is the number of bits in the index field.
9. (original) The method of claim 7 further comprising interpreting the register address fields directly when operating in a compatibility mode.

10. (original) A computer program product comprising instructions for:
  - reading an index field in an instruction, wherein the index field comprises an index to an entry in an indirection table;
  - identifying an entry in the indirection table corresponding to the index, wherein the entry comprises a plurality of register specifiers; and
  - creating an extended instruction comprising the plurality of register specifiers for processing of the instruction.
11. (original) The program product of claim 10 further comprising the instructions of:
  - determining whether to process the instruction is to be processed in an extended mode;
  - extracting the index field of the instruction when the instruction is to be processed in extended mode; and
  - merging an appropriate number of extended register specifiers with remaining components of the fetched instruction.
12. (original) The program product of claim 10 further comprising an instruction for merging an appropriate number of extended register specifiers with remaining components of the fetched instruction.
13. (original) A program product for encoding registers in a computer instruction, said program product comprising instructions for:
  - constructing a table, the table having a plurality of entries and each entry specifying a combination of a plurality of registers;
  - generating an instruction having a reference to one of the entries in the table;
  - managing the table by generating instructions to load table entries from memory and to store table entries to memory.

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14. (original) The program product of claim 13 wherein the instruction for constructing a table comprises

constructing a table comprising a plurality of register specifiers and  $2^B$  entries where B is the number of bits in the index field.

15. (original) The program product of claim 13 further comprising  
an instruction for interpreting the register address fields directly when operating in a compatibility mode.